

GOVT.POLYTECHNIC,NAYAGARH

LESSON PLAN

Discipline : Mechanical Engg.	Semester: 5 th Sem	Name of the Teaching Faculty: Samir Kumar Sethi, Lect.(ELECTRONICS) & HIMANSHU PATRA, PTGF(MECH)
Subject: Mechatronics	No. Of Days/Week Class Allotted	Semester From Date: 15/09/2022 to 22/12/2022 No. Of Weeks : 15
Week	Class Day	Theory/Practical Topics
1st	1st	INTRODUCTION TO MECHATRONICS: Definition, Advantages & disadvantages of Mechatronics.
	2nd	Application of Mechatronics, Importance of mechatronics in automation.
	3rd	Components of a Mechatronics System
	4th	Review class and Discussion
2nd	1st	Assignment Evaluation & Class Test
	2nd	SENSORS AND TRANSDUCERS: Definition and classification of transducer
	3rd	Classification of Transducer
	4th	Electromechanical Transducers
3rd	1st	Transducers Actuating Mechanisms
	2nd	Sensors and its classifications
	3rd	Displacement & Positions Sensors
	4th	Electromechanical Transducers
4th	1st	Transducers Actuating Mechanisms
	2nd	Sensors and its classifications
	3rd	Displacement & Positions Sensors
	4th	Velocity and Motion sensors
5th	1st	Force and Pressure sensors.
	2nd	Temperature sensors
	3rd	Light sensors
	4th	Review class and Discussion
6th	1st	Assignment Evaluation & Class Test
	2nd	ROBOTICS: Definition, Function and laws of robotics

	3rd	Types of industrial robots, Advantages, Disadvantages and Applications of robots
	4th	Robotic systems
7th	1st	Review class and Discussion
	2nd	Assignment Evaluation & Class Test
	3rd	ELEMENTS OF CNC MACHINES: Introduction to Numerical Control of machines
	4th	NC machines
8th	1st	CNC machine
	2nd	CAD and CAM
	3rd	Software and hardware for CAD/CAM, Functioning of CAD/CAM system
	4th	Features and characteristics of CAD/CAM system, Application areas for CAD/CAM
9th	1st	Review class and Discussion
	2nd	Introduction to CNC Machines, Elements of CNC machines
	3rd	Machine Structure
	4th	Guideways/Slide ways and its types
10th	1st	Drives and types, Spindle drives
	2nd	Feed drive
	3rd	Spindle and Spindle Bearings
	4th	Review class and Discussion
11th	1st	Assignment Evaluation & Class Test
	2nd	PROGRAMMABLE LOGIC CONTROLLERS(PLC):
	3rd	Introduction, Definition and Advantages of PLC, Selection and uses of PLC
	4th	Architecture basic internal structures
12th	1st	Input/output Processing and Programming
	2nd	Mnemonics, Master and Jump Controllers
	3rd	Review class and Discussion
	4th	Assignment Evaluation & Class Test
13th	1st	MECHANICAL ACTUATORS:
	2nd	Machine, Kinematic Link, Kinematic Pair
	3rd	Mechanism, Slider crank Mechanism
	4th	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
14th	1st	Belt & Belt drive
	2nd	Electrical Actuator: Switches and relays, Solenoids
	3rd	D.C Motors

	4th	A.C Motors
15th	1st	Stepper Motors, Specification and control of stepper motors
	2nd	Servo Motors D.C & A.C
	3rd	Review class
	4th	Assignment Evaluation & Class Test
		Revision
		Revision

H. V. Patil
12/10/2022

PTGFC (Mech)